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Compute Project



**OCP U.S. SUMMIT 2017**

Santa Clara, CA



# EXPO HALL: PRES. Moving Beyond the Inflection Point: A White Box Perspective

David Fermor  
Vice President of Engineering  
Delta Products Corporation

OPEN HARDWARE.

OPEN SOFTWARE.

OPEN FUTURE.





**OPEN**  
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< 2015



**Microsoft**



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> 2016



*Agema*



**DELTA**



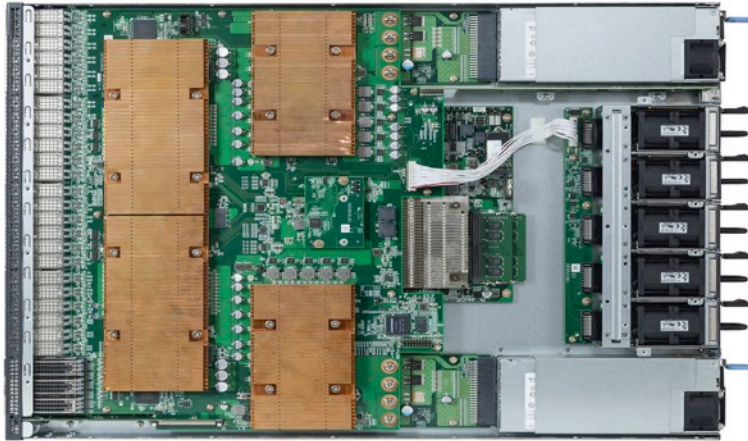
Service  
Providers

Data Center

Enterprise



# AGC5648- 25GbE Deep Buffer Switch

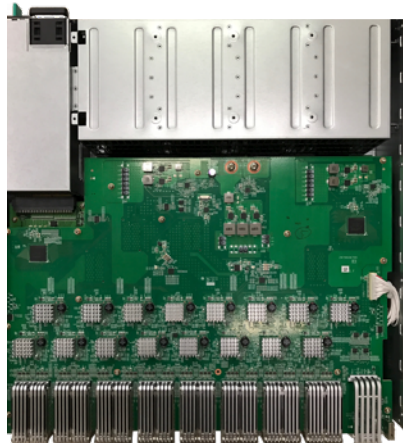


- Carrier Class Switching:
  - 48 SFP28 + 6 QSFP28
  - Broadcom BCM88680 Jericho+ (2 off)
  - External TCAM: BCM52311 x 2
  - 8GB GDDR5 per BCM88680
  - Sync-E support
- CPU: Intel Broadwell D1548
  - 32GB DDR4
  - 64GB SSD
  - BMC
  - TPM
- ONIE Install Environment
- 1600W Redundant PSU - AC and DC versions

Sample/Product Availability:

**NOW**

# AG9064 – Data Center Spine



- Data Center Switching:
  - 64 QSFP28
  - Broadcom BCM56970 (Tomahawk2)
- CPU: Intel Broadwell D1547
  - 32GB DDR4
  - 64GB SSD
  - BMC
  - TPM
- ONIE Install Environment
- 1600W Redundant PSU - AC and DC versions

Sample/Product Availability:

**COMING SOON**





# The Delta Advantage



## Delta's Solar Tracking Solution Contributes to Crescent Dunes Solar Energy Project

Delta's solar tracking solution offers industry leading performance and pointing accuracy to help synchronize and manage over 10,000 tracking mirrors, called heliostats.



## Designed to be LEED Platinum and Net Zero

Delta Americas headquarters boasts a ground source heating and cooling system that reduces HVAC energy consumption by 60 percent compared to traditional systems, and is powered by Delta's solar system to meet net zero.



## See Future Smart Manufacturing in the Cloud

Delta showcased innovative automation technology at SPS/IPC/Drives/Nuremberg 2016, featuring its cloud and IIoT technology, as well as new advanced industrial automation products to help customers achieve smart manufacturing.

## Our Business

### Power Electronics

- Embedded Power Supplies
- Mobile Power Supplies
- Industrial and Medical Power Supplies
- Fans and Thermal Management
- Electronic Components for ICT Equipment

### Energy Management

- Industrial Automation
- Telecom Power Systems
- UPS & Datacenter Infrastructure
- Automotive Electronics & EV Charging
- Renewable Energy
- Energy Storage Systems

### Smart Green Life

- Networking Systems
- Display and Visualization
- **vivitek**
- LED Lighting
- Healthcare Devices
- **Innergie**

## Solutions

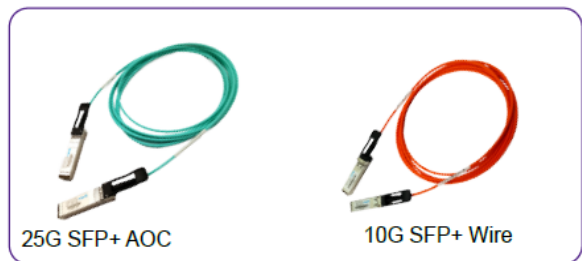
- Industrial Automation Solutions
- Building Automation Solutions
- Datacenter Solutions
- Telecom Network Energy Solutions
- Renewable Energy Solutions
- Display and Monitoring Solutions
- EV Charging Solutions



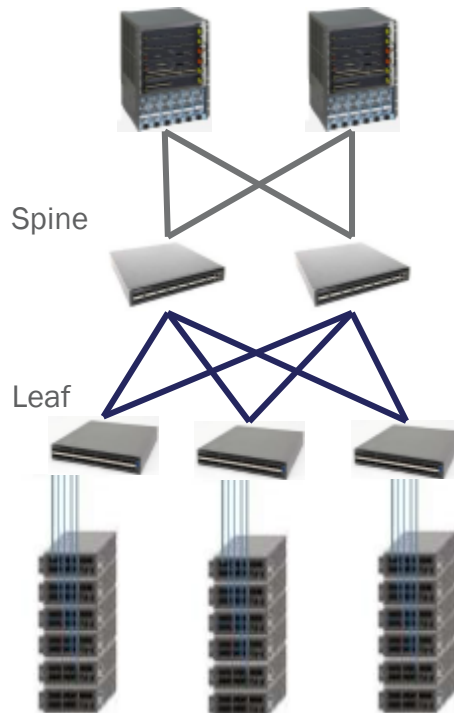
**DELTA NETWORKS, INC.**

# Data Center Architecture with Delta's Products

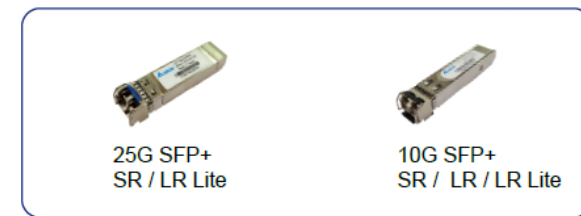
## Active Optical Cable



Spine/Edge



## Fiber Optical Transceiver

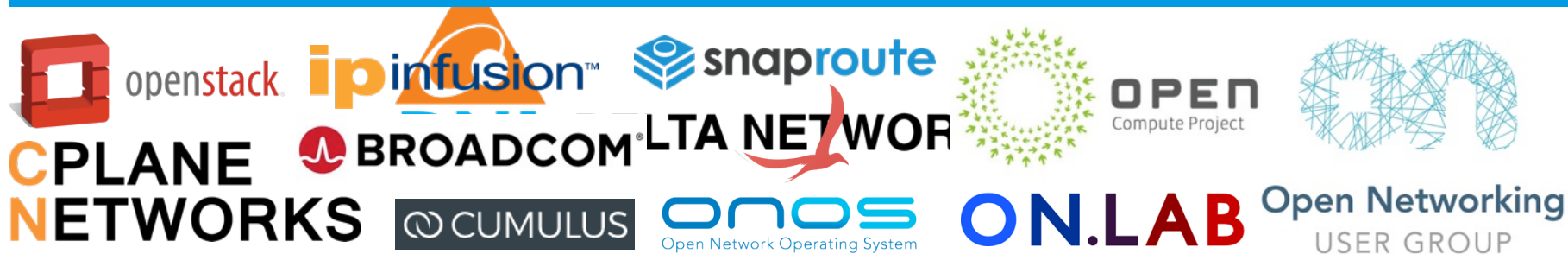




# The Agema Advantage



Service Provider SW and Integration Partners







## Partner Quotes



“Broadcom is pleased to collaborate with Agema to provide the carrier grade deep buffer Ethernet switch solution. Broadcom's partnership with Agema enabled a fast time-to-market, industry-leading networking solution for data centers and service providers, and we look forward to launching many more platforms in the coming months.”

- Wei-Ai Tai, Director of Business Development

“By building a disaggregated network with Agema’s robust network switches and the OcNOS™ network operating system, large-scale data centers can deliver services faster, easier and at less cost,” said Atsushi Ogata, CEO and president of IP Infusion. “With Agema and IP Infusion, enterprises and service providers who want an Open Compute standards-based solution can build their disaggregated network more quickly and gain the greater flexibility and scalability they need.”

- Srikanth Krishnamoha, Director of Business Development

“CPLANE NETWORKS is pleased to team with Agema Systems to deliver a truly open solution for advanced cloud networking. Agema’s high-performance white box switches, combined with CPLANE’s multi-site cloud orchestration, gives enterprises and service providers an ideal platform for software-defined networking. With seamless integration to the industry-leading OpenStack virtual infrastructure manager, the Agema/CPLANE solution enables customers to quickly deploy multi-site clouds within the data center for agile workload placement, and at the network edge for NFV and IoT.”

- Brandon Williams, CEO CPLANE NETWORKS



## Next Steps with OCP



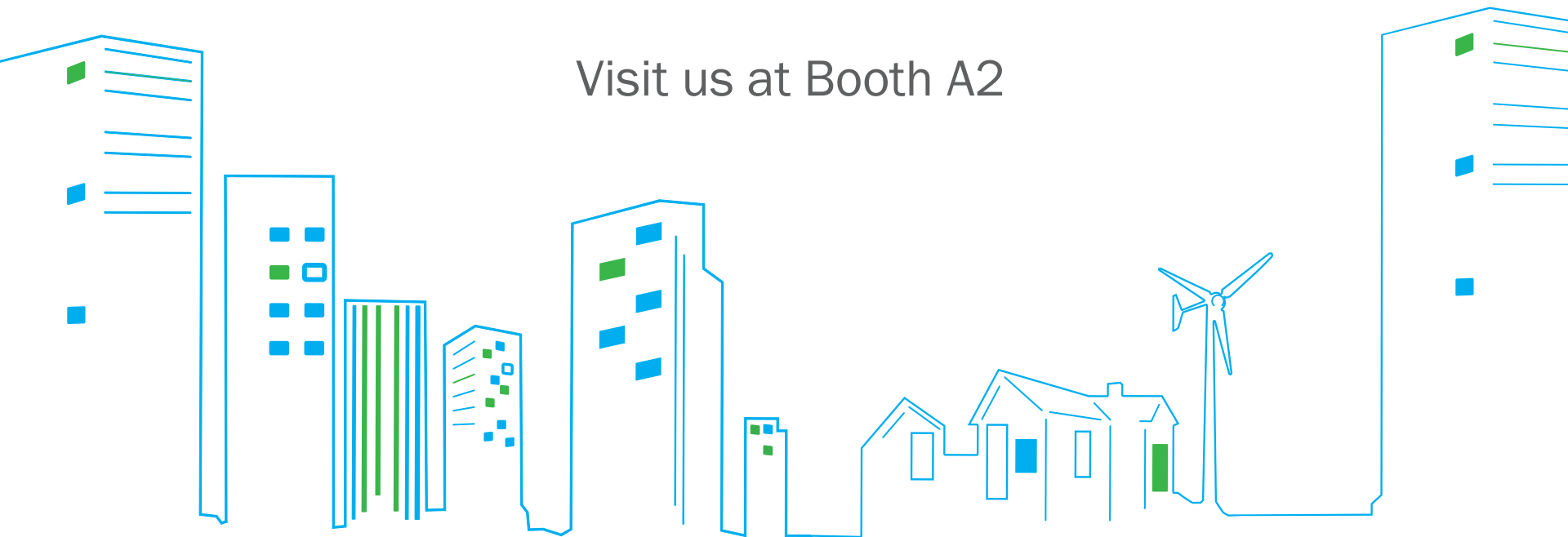
1. Agema is working with UNH-IOL to define critical use-cases, beyond Layer 1, which are candidates for more advanced inter-op and certification reference platforms:

- a) Data Center
- b) Enterprise
- c) Service Provider CORD
- d) Service Provider Mobile Backhaul

2. Licensing – As OCP evolves to serve the white-box industry further we request that the licensing framework also evolves to respect the intellectual property that exists within the state-of-the art platform designs. Delta/Agema propose that developing a certification capability at the functional level will act as a catalyst and enabler for greater participation within OCP at both the HW and SW level.

# Thank You

Visit us at Booth A2





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# The Agema Advantage



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DELTA NETWORKS, INC.

## High-performance, High-density and Ultra-low-latency

Discover the new Agema ToR switch

[Learn More »](#)



### Online Lab

Experience Agema switch with different extensible modular NOS (Networking Operation System)  
[CLICK HERE](#)



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Learn about Next Gen Open Networking, SDN, NFV and SDDC Click here to join Agema webinar series  
[CLICK HERE](#)



### Solutions Center

Learn about complex network configurations and technologies  
[CLICK HERE](#)



CPLANE NETWORKS

Applications, say hello to your new network!™

Service Provider  
SW and Integration  
Partners



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Open Networking  
USER GROUP



onos  
Open Network Operating System



ON.LAB